Educators learn about breeder reactors

Selected educators from colleges and universities around the United States learned firsthand about breeder reactors at a Fast Breeder Reactor Institute held in Idaho Falls this month.

The four-day institute, sponsored by Argonne National Laboratory and funded by the Department of Energy, was presented to physical and social science professors who do not work in the nuclear energy field. The educators received information on how breeder reactors work, their benefits and the social, political and technological problems associated with them.

The faculty institute is expected to be the first in a series of educational programs centered on breeder reactor programs and facilities at ANL-W for college and university faculty. The institutes are intended to increase the awareness of physical and social science faculty about breeder reactor research and development and to provide a forum for dissemination of information on energy technology to the opinion-making sector of the public.

Keynote speaker for the seminar, Tom Dillon, DOE Principal Deputy Assistant Secretary, outlined the role breeder reactors have in the administration's nuclear energy policy. In his address he cautioned, "The future of commercial nuclear power is at its most critical and uncertain point since development began in the early 1950s. Although nuclear energy is assuming a significant role in the national energy supply, there are serious concerns as to whether conditions (social, political, economic) will allow it to fulfill its promise as an important contributor to future energy needs....We (this administration) have great confidence in the merits of breeder technology, and the policy and strategy directing its development is soundly based. Its chance for success, however, could be severely limited by external political and institutional factors....The potential benefits that this essentially inexhaustible energy source offers future generations, in terms of energy stability and national security, are worthy of the best efforts of government, industry, the universities and the private sector."

Also on the program were Michael Hathway, staff director, U.S. Senate Committee on Energy and Natural Resources; Robert Seale, Nuclear Engineering Department, University of Arizona; and Juline Christofferson, Utah Nuclear Waste Management Repository Task Force. Technical experts from Argonne presented a series of lectures on technological advances in nuclear waste management, nuclear proliferation, reactor economics and in-depth discussions on design and operation of breeder reactors.

Institute participants were given an extensive tour of the ANL-W facilities.

THE 1982 WOMEN'S EQUALITY DAY program will feature Eleanor Holmes Norton, former chairperson of the Equal Employment Opportunity Commission. The program will be held Thurs., Aug. 26. Local professionals will lead mini-seminars on a variety of subjects geared toward today's working women. INEL employees and persons from the community are invited to attend. A $25 registration fee is required. For more information, contact Linda Collins (6-9169).

Device samples gases from TMI liners

by Terry Smith, EG&G Idaho

A remotely operated device being used at Three Mile Island to sample, vent and purge potentially combustible gases from the EPICOR II resin liners was designed and built at the INEL.

The device, simply called a gas sampler, is used to test the liners for the presence of hydrogen and to replace the gases in the liners with noncombustible nitrogen to ensure safe shipment to the INEL. A second gas sampler, very similar to the one at TMI, is being used to vent gases from the liners at the TAN 607 Hot Shop, where the liners are to be received.

The EPICOR II resin liners, working similar to a home water softener, were used to strip radioactive materials from the water in the damaged TMI plant. The liners are being shipped to the INEL for research and development work.

The gas sampler was designed by John Bower, an engineering supervisor with EG&G Idaho's Mechanical Engineering Division. The gas samplers were fabricated at the TAN 607 Machine Shop.

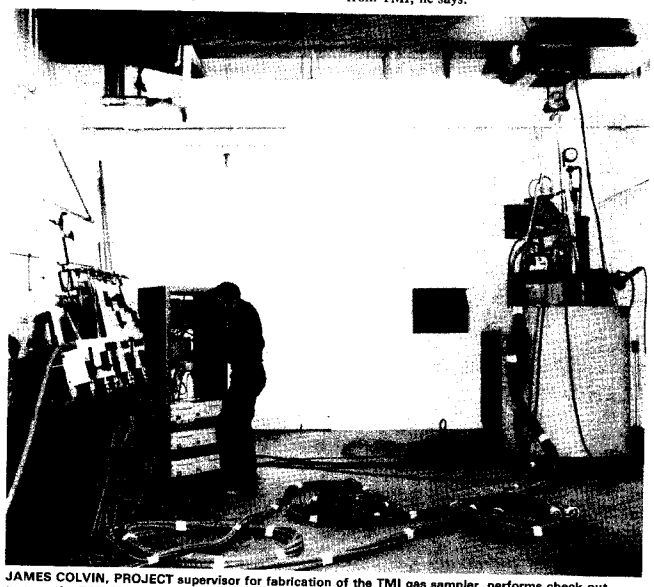
At TMI the gas sampler is operated from a remote control panel housed in a small trailer, positioned 50 feet away from the silo where the liners are stored. The gas sampler is equipped with television cameras so that operators can view the operation from monitors on the control panel.

The operation consists of lowering the gas sampler onto the top of one of the cylindrical liners and securing it in place. Tools powered by air motors then remove vent plugs and a shroud is lowered to seal the joint and prevent the escape of gases. A hose channels a gas sample to the control panel, where pressure is measured and an air analyzer determines the gases and their quantities present.

After the sample is taken, the gases in the liner are channeled to a filter system and replaced in the liner with noncombustible nitrogen. Before the gas sampler is lifted from the liner, the plugs are reinstalled with the air-powered tools.

The gas sampler at TAN 607 is identical to the one at TMI, except that it doesn't have its own camera system. The camera system in the Hot Shop is being used instead. Venting of the gases will be similar at TAN 607 as at TMI, except that samples won't necessarily be taken.

According to Bower, the gas samplers allow personnel to do sampling, venting, and purging from a safe distance. In addition to removing the potentially combustible gases, the gas sampler aids in characterization of the waste from TMI, he says.



JAMES COLVIN, PROJECT supervisor for fabrication of the TMI gas sampler, performs check-out tests at the TAN 607 Machine Shop prior to shipment of the device to Three Mile Island. Colvin is working at the control panel while the gas sampler sits atop an unused EPICOR II resin liner.